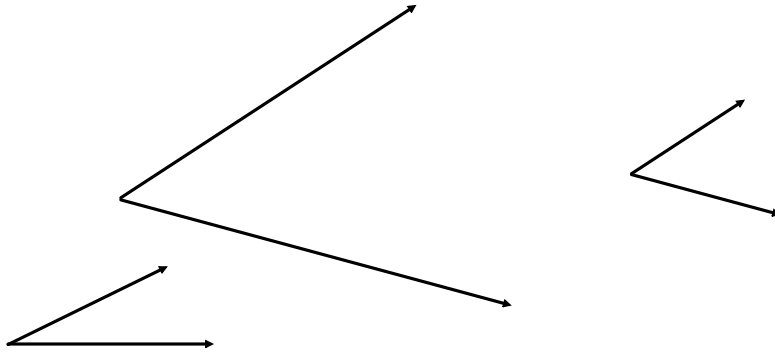




# 1.5: Measuring Angles

## Essential Question

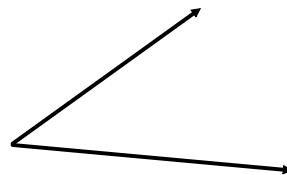
How can you measure and classify an angle?



### Lesson 1.5: Angles

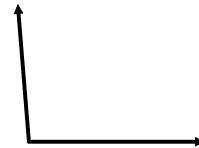
Definitions and Theorems

Angle -

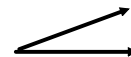


Naming an angle:

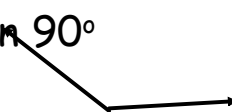
Right Angle - measure of



Acute Angle - measure \_\_\_\_\_ than  $90^\circ$



Obtuse Angle - measure \_\_\_\_\_ than  $90^\circ$



Straight Angle - measure of \_\_\_\_\_

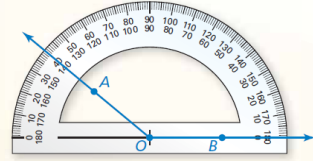


**Postulate**

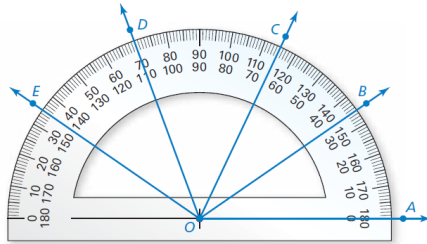
**Postulate 1.3 Protractor Postulate**

Consider  $\overline{OB}$  and a point  $A$  on one side of  $\overline{OB}$ . The rays of the form  $\overline{OA}$  can be matched one to one with the real numbers from 0 to 180.

The **measure** of  $\angle AOB$ , which can be written as  $m\angle AOB$ , is equal to the absolute value of the difference between the real numbers matched with  $\overline{OA}$  and  $\overline{OB}$  on a protractor.



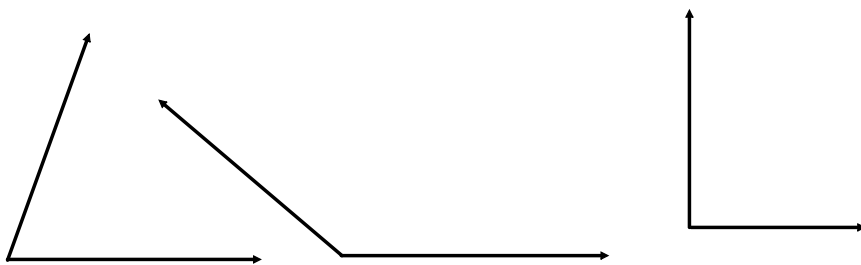
**Work with a partner.** Find the degree measure of each of the following angles. Classify each angle as acute, right, or obtuse.



- a.  $\angle AOB$
- b.  $\angle AOC$
- c.  $\angle BOC$
- d.  $\angle BOE$
- e.  $\angle COE$
- f.  $\angle COD$
- g.  $\angle BOD$
- h.  $\angle AOE$

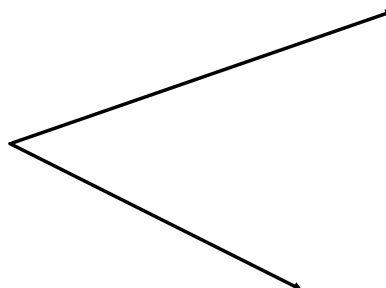
Measuring Angles

A Protractor is a tool used for measuring angles. Use a protractor to measure the angles below.



Angle Bisector: A ray that \_\_\_\_\_ and angle.

Example: Use a protractor to draw the angle bisector



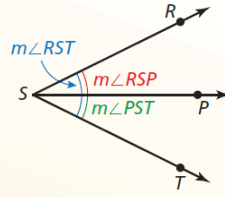
## Postulate

### Postulate 1.4 Angle Addition Postulate

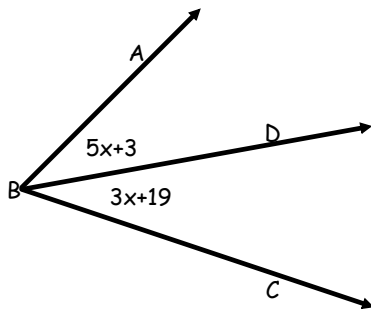
**Words** If  $P$  is in the interior of  $\angle RST$ , then the measure of  $\angle RST$  is equal to the sum of the measures of  $\angle RSP$  and  $\angle PST$ .

**Symbols** If  $P$  is in the interior of  $\angle RST$ , then

$$m\angle RST = m\angle RSP + m\angle PST.$$



Example: Find the value of  $x$  and find  $m\angle ABC$  if  $BD$  is an angle bisector



Example: Find the value of  $x$  and the measure of all the angles.

